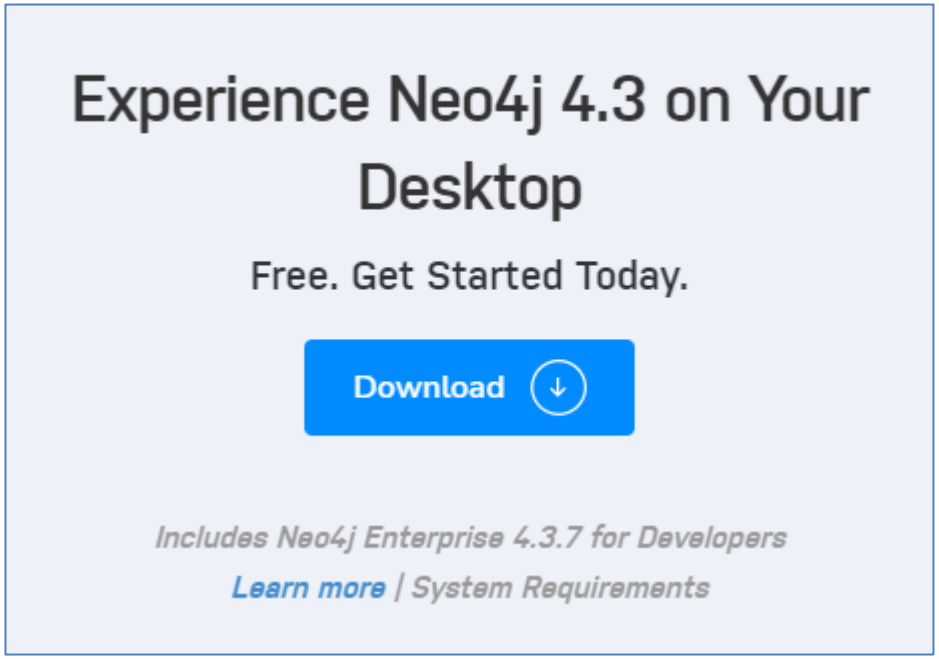
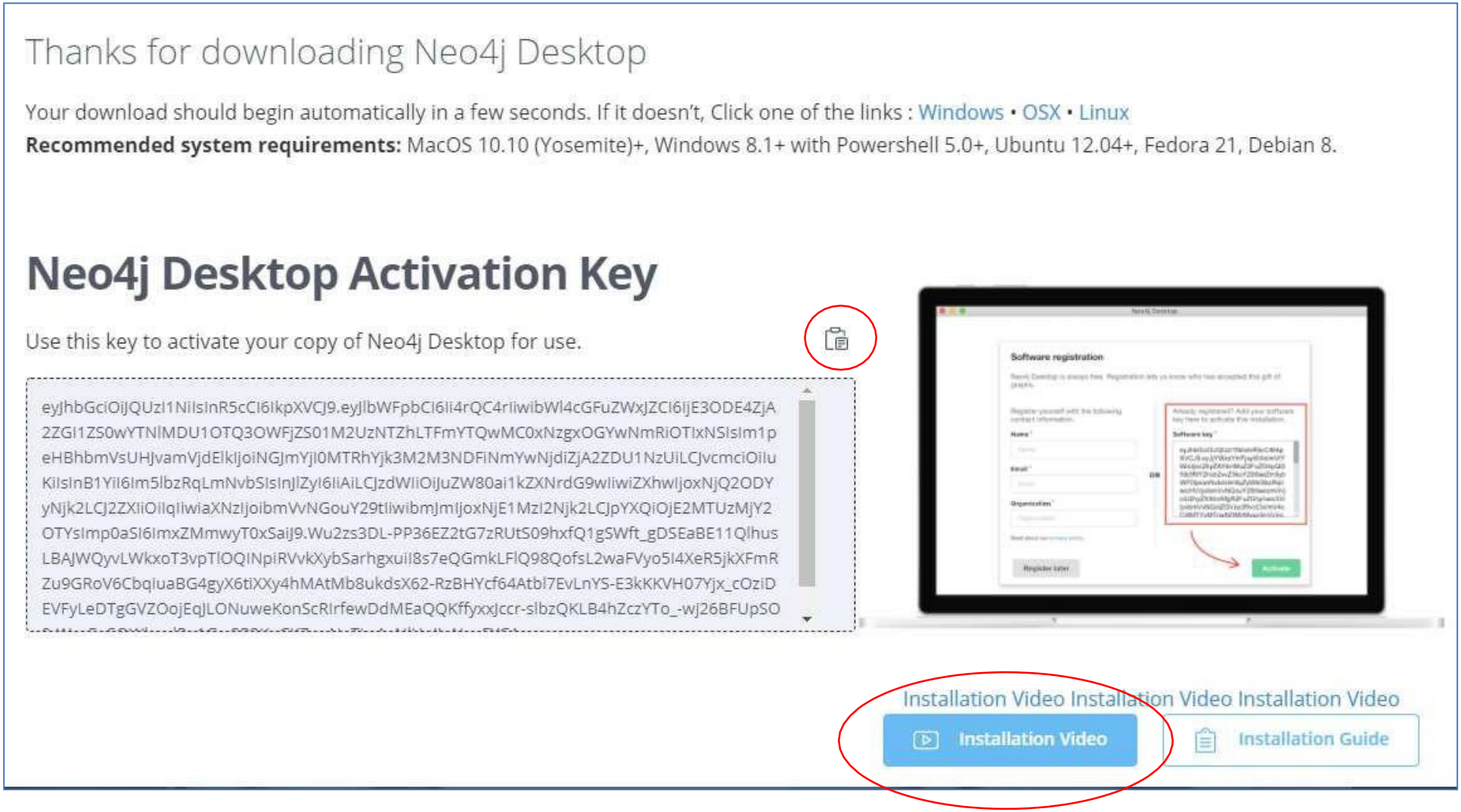
Neo4j Desktop Installation Instructions – MSDS 420

Step 1: **Click on Download**
https://neo4j.com/download/



Step 2: **put in your information and click on** 

Step 3: **Copy the activation key by either cut/paste or look for the 'copy to clipboard icon'**

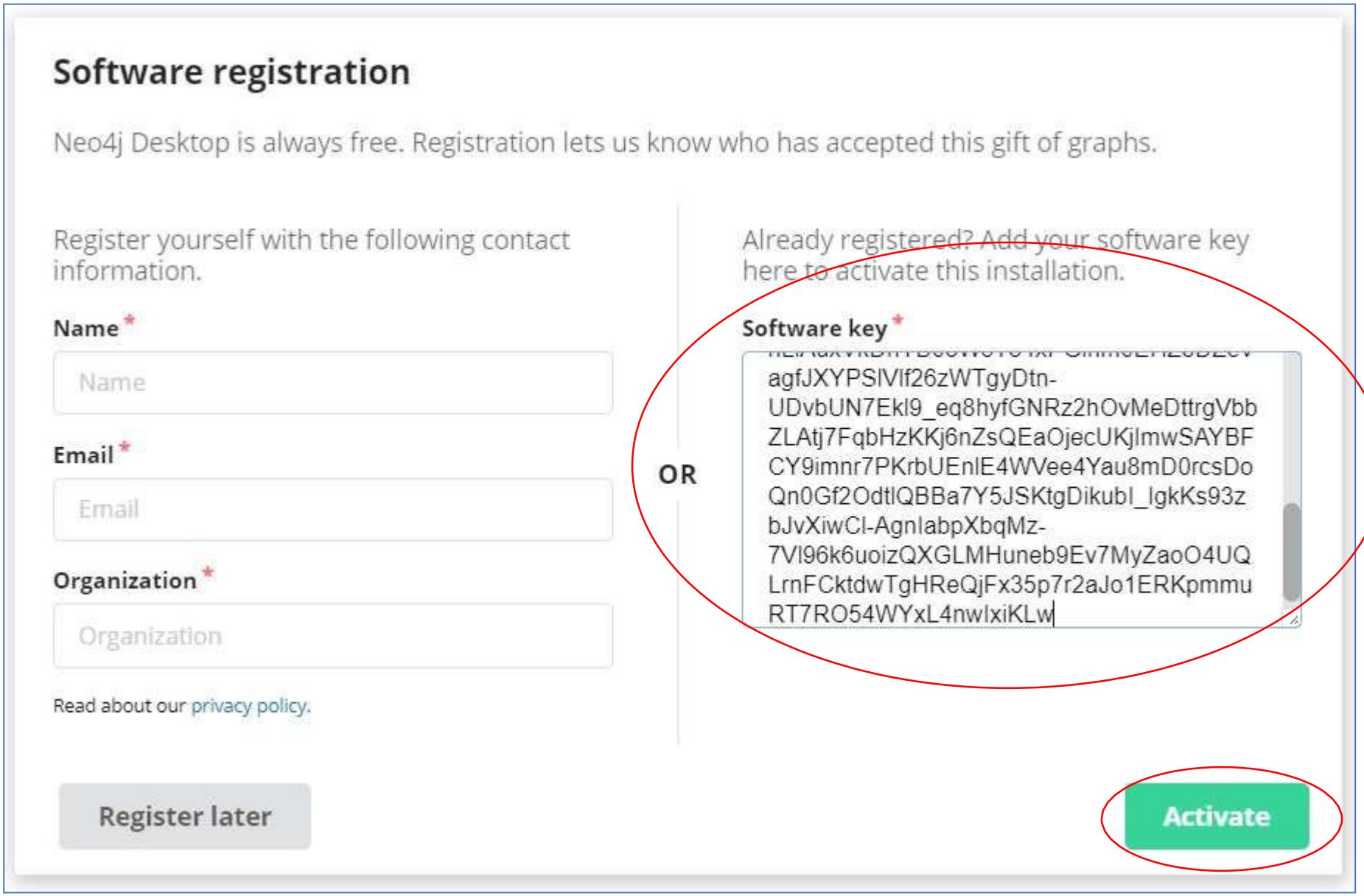


Step 4: **watch the installation video if you want additional help; also, this link is very good: https://neo4j.com/developer/neo4j-desktop/**

Step 5: **click on the downloaded file to run installation.**

Step 6: **Finish install. When prompted if you want to run the software, answer 'Yes'.**

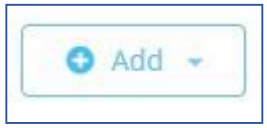
Step 7: **Software registration – paste the Software key provided and click on the green Activate button**



Step 7A: if Neo4j offers an upgrade (I know you just installed a new version and you would think it is the newest), then do the upgrade.

Step 8:  **click on Projects and then click on +New (don't click on the down arrow, just the New)**

Step 9: **change Project name to Exercise 5**

Step 10: 

click on Add to add a Local DBMS

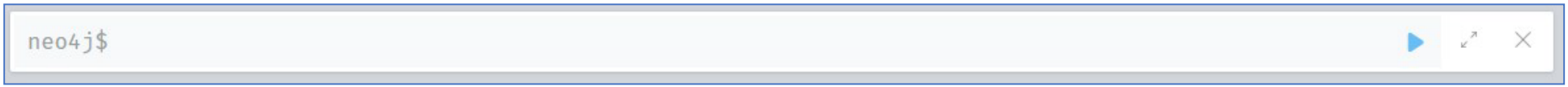
Step 11: **you can leave the name to Graph DBMS, but you need to set a password and make sure it is something you will remember. I will set mine to 'test'.**

Step 12: **click on** 

button

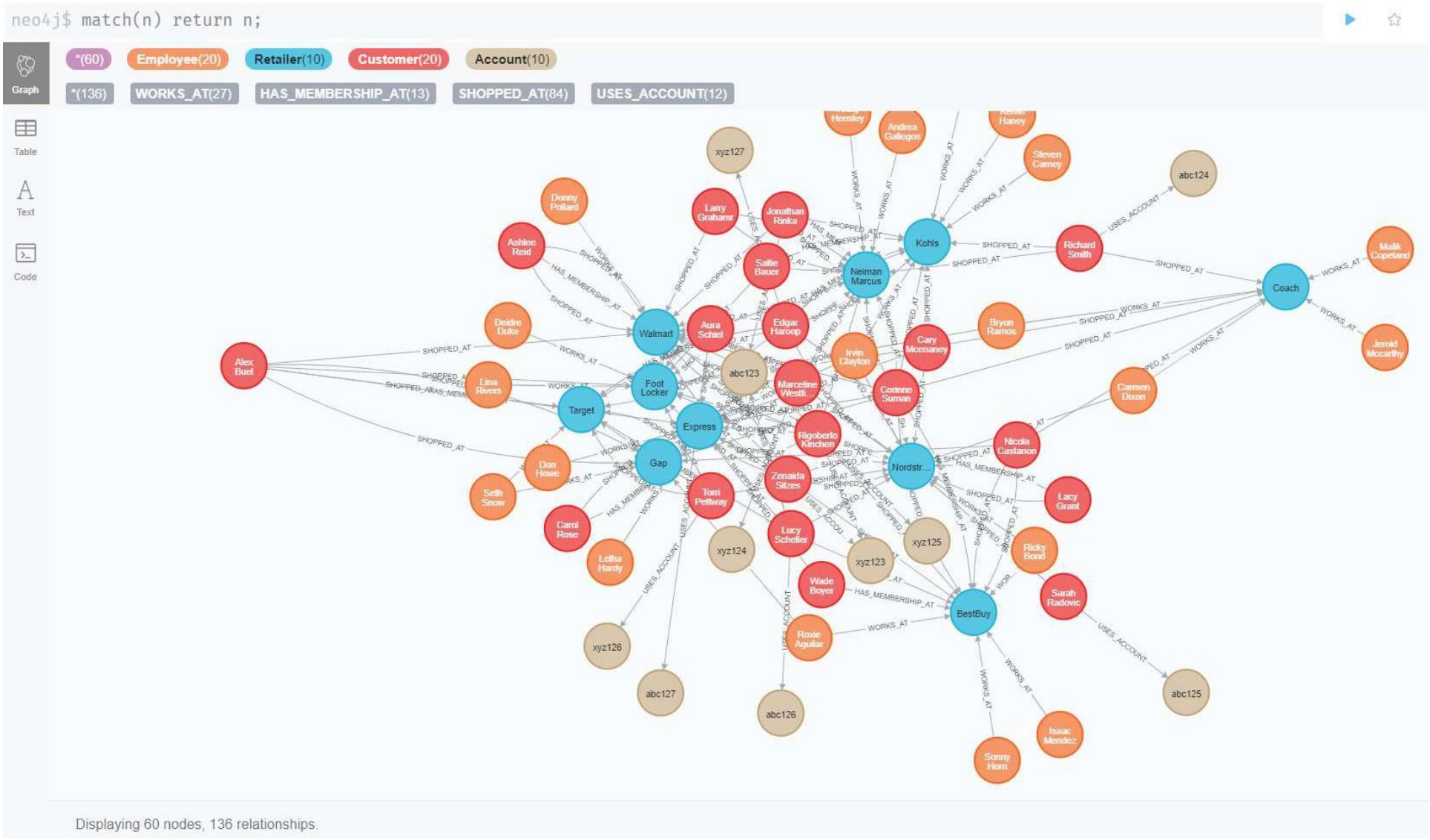
Step 13: **Hover over your Graph DBMS and you will see a Start button show up; click on the Start button. This will take about 30seconds, but once it is Active, you need to click on the blue Open**

Step 15: **Open the Neo4j browser by clicking on the blue Open With and selecting Neo4j browser (this might take a while). Once the Neo4j browser is open, cut/paste the Cypher code that will create the database into the command line and then click on the blue arrow at the far-right hand side of screen.**



Step 16: **After your database has been created, in the neo4j$ command line, type in the following command and then use the blue arrow to run the line. You will see the graph below show up.**

```
neo4j$ match(n) return n;
```



MSDS 420 Exercise 5 – Neo4j Graph Database Fraud detection

Submission: Submit a PDF as lastname_exercise5.pdf that contains the cypher code and a screen shot of the answer.

After successful installation of Neo4J on your personal computer, startup a new project and add a database with the name Exercise 5.

Create the Graph database for Exercise_5 based on the following business rules:

1. There are four Labels:
    a. Employee
    b. Retailer
    c. Customer
    d. Account
2. There are four relationships:
    a. WORKS_AT (Employee WORKS_AT Retailer)
    b. SHOPPED_AT (Customer SHOPPED_AT Retailer)
    c. HAS_MEMBERSHIP_AT (Customer HAS_MEMBERSHIP_AT Retailer)
    d. USES_ACCOUNT (Customer USES_ACCOUNT Account)
3. There are number of retailers that the customer can shop at
4. The retailer has several employees
5. The employee may work in more than one retailer
6. The customer may shop at multiple retailers; hence, a customer might have one or more transactions with one or more retailers
7. Every transaction has a date (timestamp) associated with it, and the transaction could be either Approved or Disputed
8. The customer might have personal online accounts
9. Customers might share the same online account; for example, a customer might share the account with the spouse.

Homework questions:

1. Use the provided Cypher script to create the graph database
    a. You could use any names for your project and the graph database
    b. Copy the **ENTIRE** Cypher code in the script and paste it in ne4oj$ prompt and then click the blue play button on the right.
    c. (DO NOT copy and paste one line at a time)

d. Run the command below. Find the Customer Ashlee Reid and pull the node to the far left of the screen. Include a screencapture of this view to show you were able to load the database **(6 points)**

```
MATCH (n) RETURN (n);
```

2. Execute the following Cypher code to get the list of retailers: **(1 point)**

```
MATCH (r:Retailer)RETURN (r);
```

3. Execute the following Cypher code to the get the list of employees: **(1 point)**

```
MATCH (e:Employee)RETURN (e);
```

4. Execute the following Cypher code to the get the list of customers: **(1 point)**

```
MATCH (c:Customer)RETURN (c);
```

5. Execute the following Cypher code to the get the list of all disputed transactions: **(1 point)**

```
MATCH (customer:Customer)-[transaction:SHOPPED_AT]->(retailer)WHERE transaction.status = "Disputed"
RETURN customer.name AS `Customer Name`, retailer.name AS `Retailer Name`, transaction.amount AS `TransactionAmount`,
transaction.date AS `Transaction date`
ORDER BY `Transaction date` DESC
```

6. Write the Cypher code to get the number of disputed transactions for every retailer **(6 points)**

7. Write the Cypher code to get the number of disputed transactions and the list of customer names for these disputed transactionsfor every retailer **(6 points)**

8. Write the Cypher code to get the number of disputed transactions for every customer that has more than one disputedtransaction **(6 points)**

9. Write the Cypher code to get the list of stores on LaSalle street that have disputed transactions and the number of disputed transactions for every store; the store list must be sorted by store name in ascending order. **(6 points)**

10. Write the Cypher code to get the list of Employees who work in at least 2 stores where disputed transactions reported in these retailers **(6 points)**